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NOTICE OF ALLOWANCE AND ISSUE FEE DUE

15M1/0414

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| APPLICATION NO. | FILING DATE | TOTAL CLAIMS | EXAMINER AND GROUP ART UNIT | DATE MAILED |
|-----------------------|------------------|--------------|-----------------------------|---------------|
| 08/680,610 | 07/16/96 | 005 | BERMAN, S | 1507 04/14/97 |
| First Named Applicant | IGARASHI, ICHIRO | | | |

TITLE OF INVENTION: ACTIVE ENERGY BEAM-CURABLE COMPOSITIONS COMPRISING OXETANE COMPOUNDS
(AS AMENDED)

| ATTY'S DOCKET NO. | CLASS-SUBCLASS | BATCH NO. | APPLN. TYPE | SMALL ENTITY | FEE DUE | DATE DUE |
|-------------------|----------------|-----------|-------------|--------------|-----------|----------|
| 1 1225.001 | 522-168.000 | L91 | UTILITY | NO | \$1290.00 | 07/14/97 |

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.
PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS
APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as yes, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "6b" of Part B should be completed.

III. All communications regarding this application must give application number and batch number. Please direct all communication prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.



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Washington, DC 20231

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
| 08/680,610 | 07/16/96 | IGARASHI | I 1225.001 |

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EXAMINER

BERMAN, S

ART UNIT

PAPER NUMBER

1507

DATE MAILED: 04/14/97

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Notice of Allowability

Application No.

08/680,610

Applicant(s)

Igarashi et al

Examiner

Susan Berman

Group Art Unit

1507



All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☒ This communication is responsive to filing 07-16-96

☒ The allowed claim(s) is/are 1-5

☐ The drawings filed on _____ are acceptable.

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☐ Applicant MUST submit NEW FORMAL DRAWINGS

☐ because the originally filed drawings were declared by applicant to be informal.

☐ including changes required by the Notice of Draftsperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. _____

☐ including changes required by the proposed drawing correction filed on _____, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☐ Interview Summary, PTO-413

☐ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☒ Examiner's Statement of Reasons for Allowance

Art Unit: 1507

Information Disclosure Statement

The citation of 07-62082, Japan, fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of the patent which is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered. The Abstract provided for 07-53711. Japan, has been considered, however, the document in its entirety has not been considered in the absence of a translation of same.

Specification

The word "oxyrane" appears throughout the specification and claims. The spelling has been changed to "oxirane".

REASONS FOR ALLOWANCE

The following is an Examiner's Statement of Reasons for Allowance:

The prior art cited by applicant and otherwise known to the examiner does not teach or suggest compositions comprising an oxetane having at least one hydroxy group, a compound having one or more oxirane rings and a cationic initiator therefore. The closest prior art is discussed below.

Art Unit: 1507

JP 70537,11 discloses compositions comprising a compound having at least two oxetane rings in combination with an epoxy compound and a sulphonium initiator. Crivello et al (5,463,084) disclose photocurable silicone oxetanes, diepoxide monomer and onium photoinitiators. The disclosed oxetane compounds do not contain one or more hydroxy groups.

The cited articles by Crivello and Sasaki teach reactions of hydroxy-functional oxetane monomer with halogen-functional ethylenically unsaturated compounds to provide an oxetane ether compound which is ethylenically unsaturated. The monomers are used to synthesize silicone compounds having oxetane groups which can be photopolymerized in the presence of onium initiators. Compositions comprising epoxy compounds are not suggested.

Crivello (4,058,400) teaches cationic polymerization by use of radiation sensitive aromatic onium salts. The polymerization substances include cyclic ethers, such as oxetanes. Oxetanes having hydroxy groups (which provide active hydrogen atoms) are not mentioned.

Wojtowicz et al (3,463,789) teaches glycidyl oxetyl ethers which can have hydroxyl groups in the compound. The reference teaches that the compounds are useful as stabilizers for halogen-containing resins, such as vinyl chloride.

Vandenberg (4,833,183) discloses poly[3-(substituted)-3(hydroxymethyl)oxetane]. The polymers are prepared from oxetanes wherein the active hydrogen in a hydroxyl group has been blocked with a trimethylsilyl group. The trimethylsilylether oxetane compound is polymerized and then hydrolyzed to give the polymer.

Art Unit: 1507

Schlesinger (3,835,003) discloses photopolymerization of oxetanes in combination with diepoxides and diazonium initiators. Oxetanes having functional groups are disclosed but hydroxy groups are not suggested.

Archibald et al (5,362,848) discloses oxetane compounds having functional groups such as azido or nitrato groups which are useful as initiators for preparing star polymers. Composition comprising epoxides and/or cationic initiators are not disclosed.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Berman whose telephone number is (703) 308-0040.

The fax number for this group is (703) 305-5433.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-3251.



Susan Berman
Patent Examiner
Art Unit 1507

SB
04/10/97